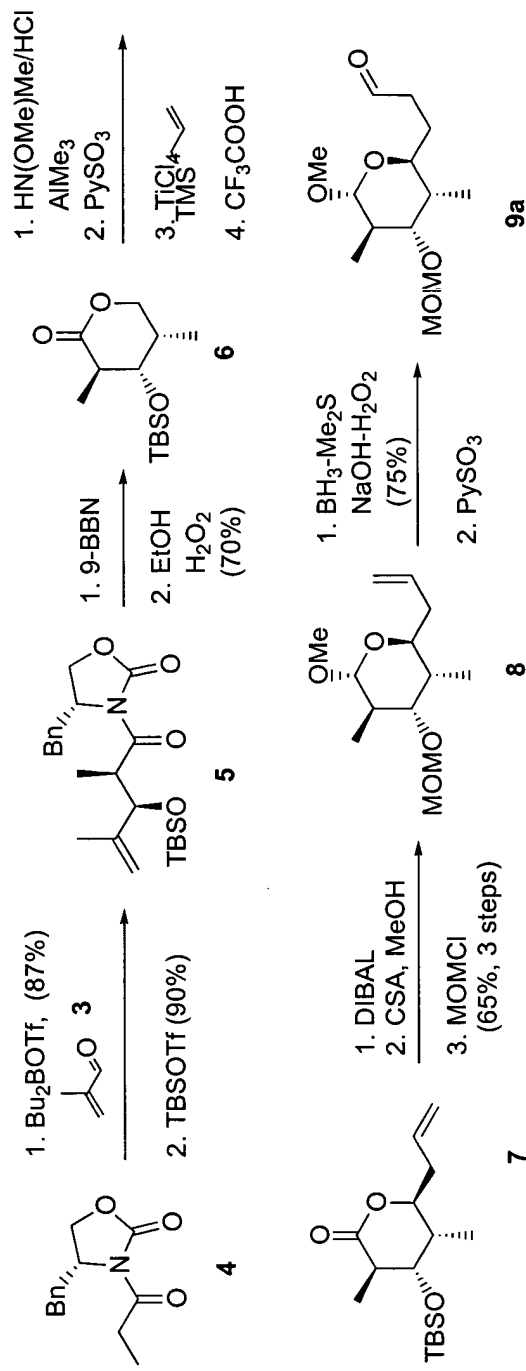
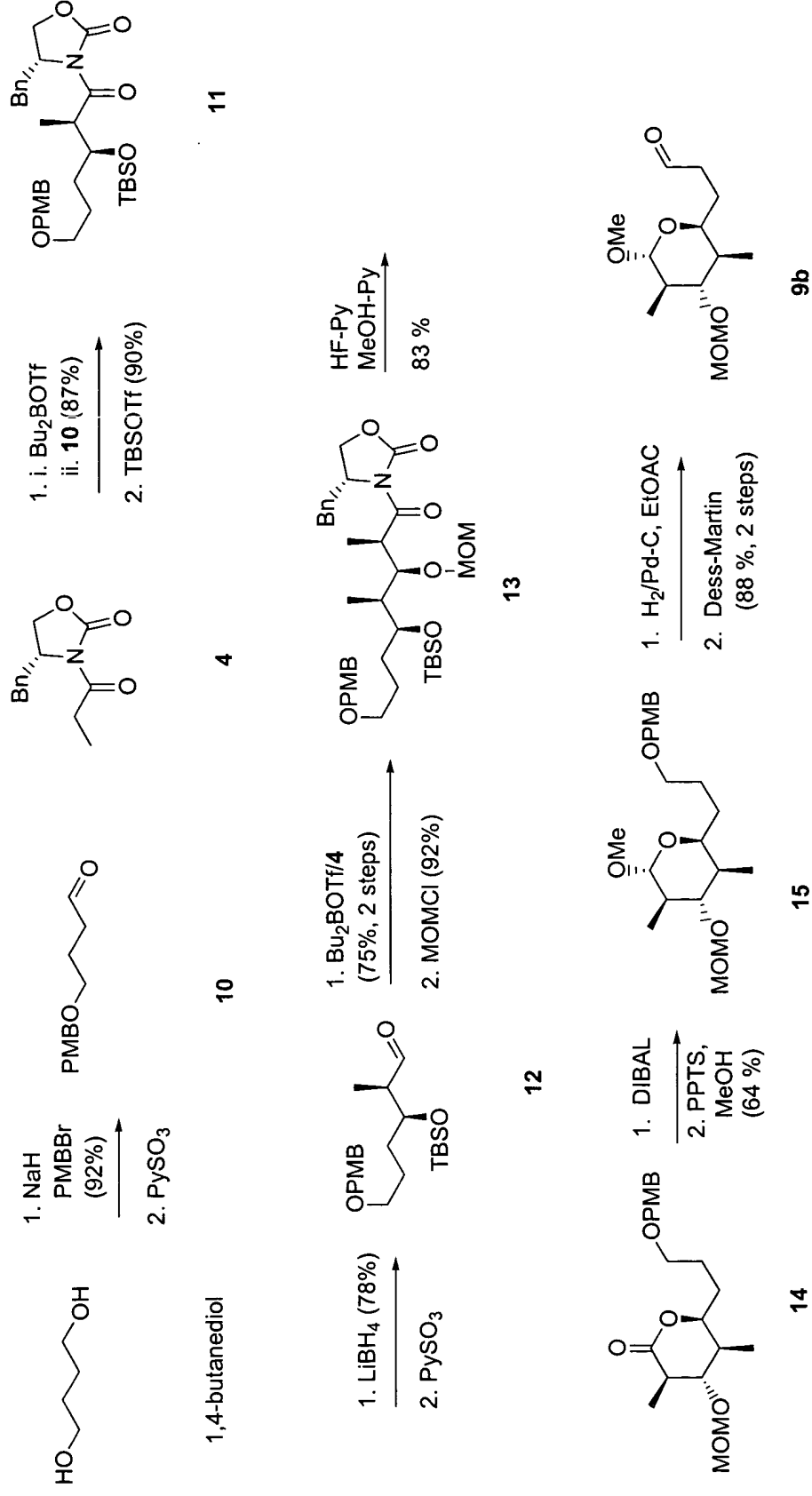


Figure 1.



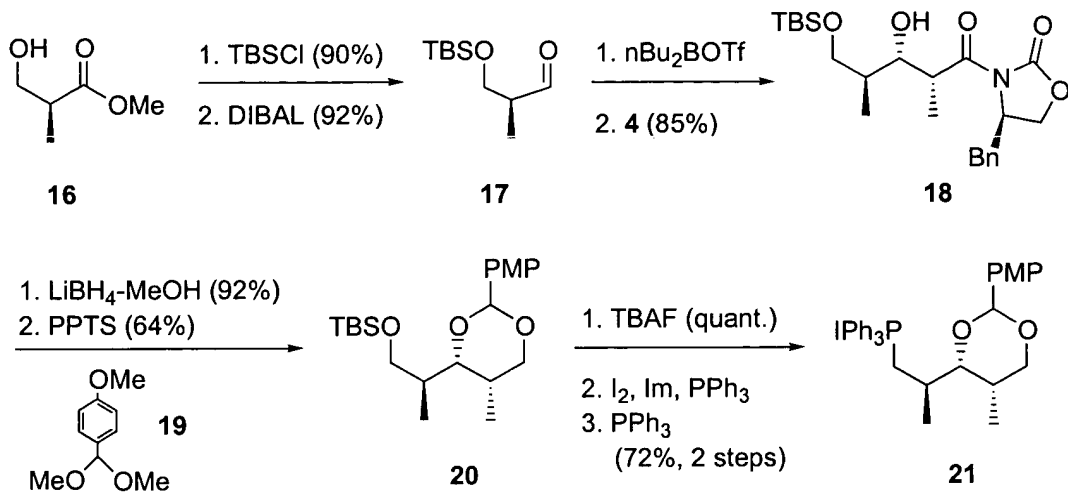
Bn is benzyl
 9-BBN is 9-borabicyclononane
 CSA is camphor sulfonic acid
 Py is pyridine
 MOM is methoxymethyl

Figure 2.

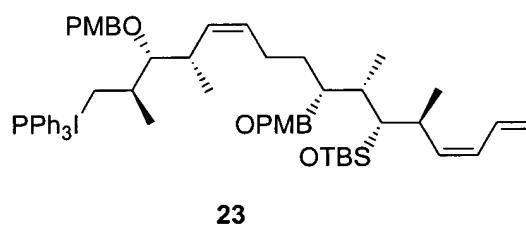
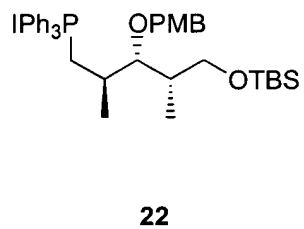


PMB is para-methoxybenzyl
MOM is methoxymethyl

Figure 3.

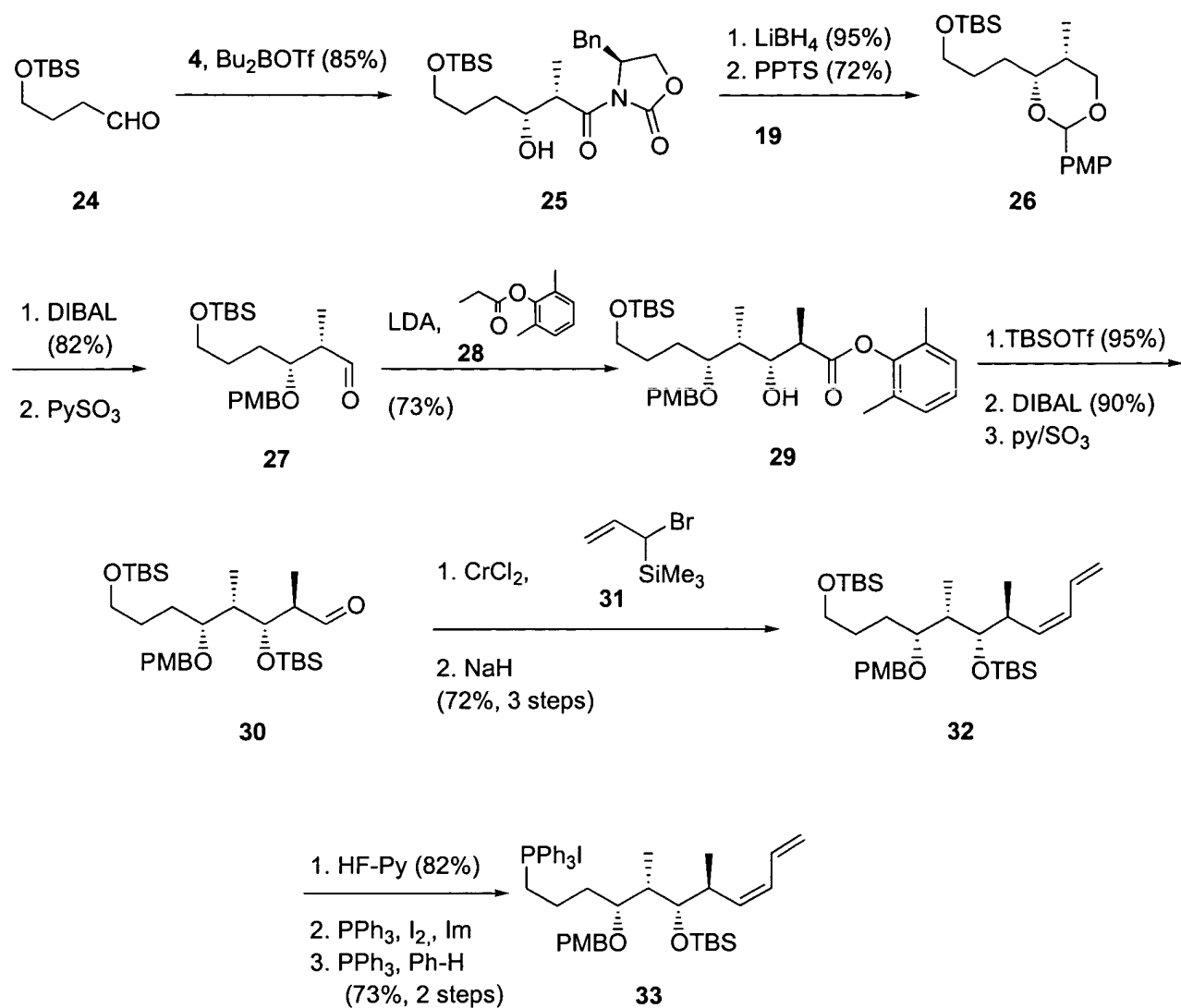


Other Phosphonium Salts

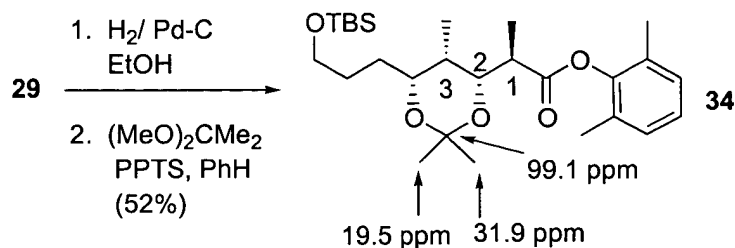


PMP is para-methoxyphenyl

Figure 4.



Assignment of configuration



$$J_{H1-H2} = 10.2 \text{ Hz}$$

$$J_{H2-H3} = 1.8 \text{ Hz}$$

Figures 6A-D. Tubulin polymerization-inducing properties of discodermolide (A), **40** (B), **41** (C) and **42** (D) in comparison to 10 μ M paclitaxel (PTX).

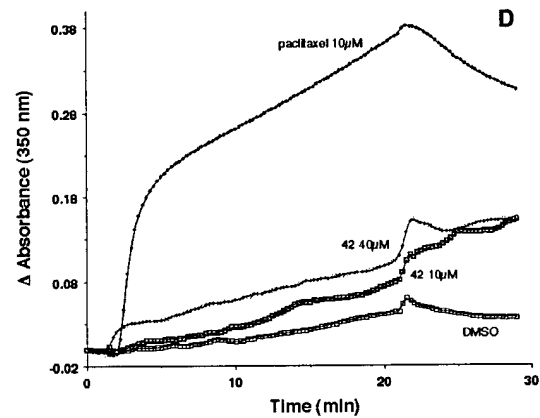
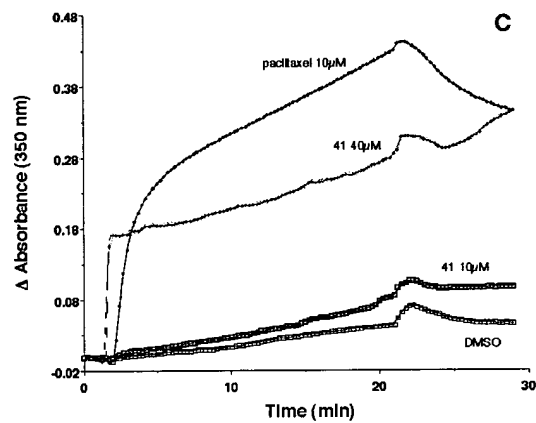
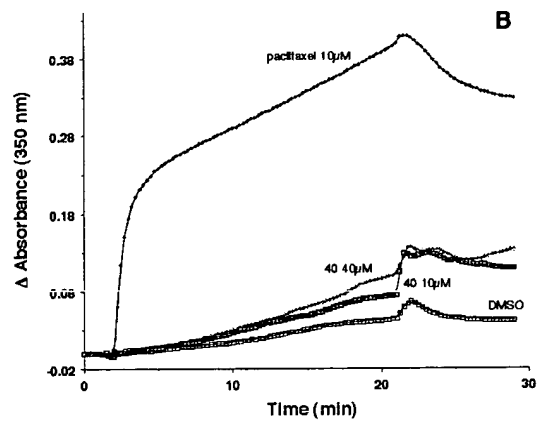
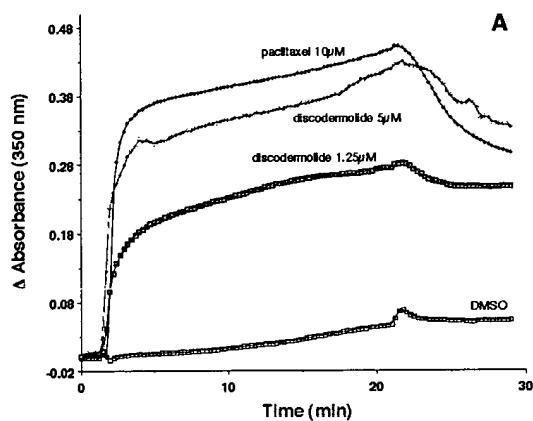


Figure 7. Retrosynthetic analysis of hybrid **3**

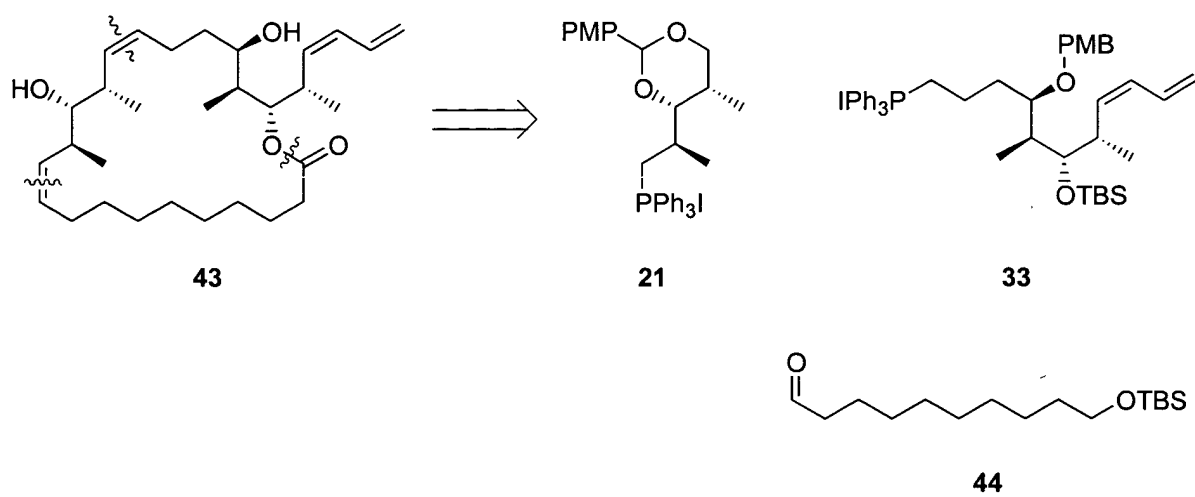


Figure 8.

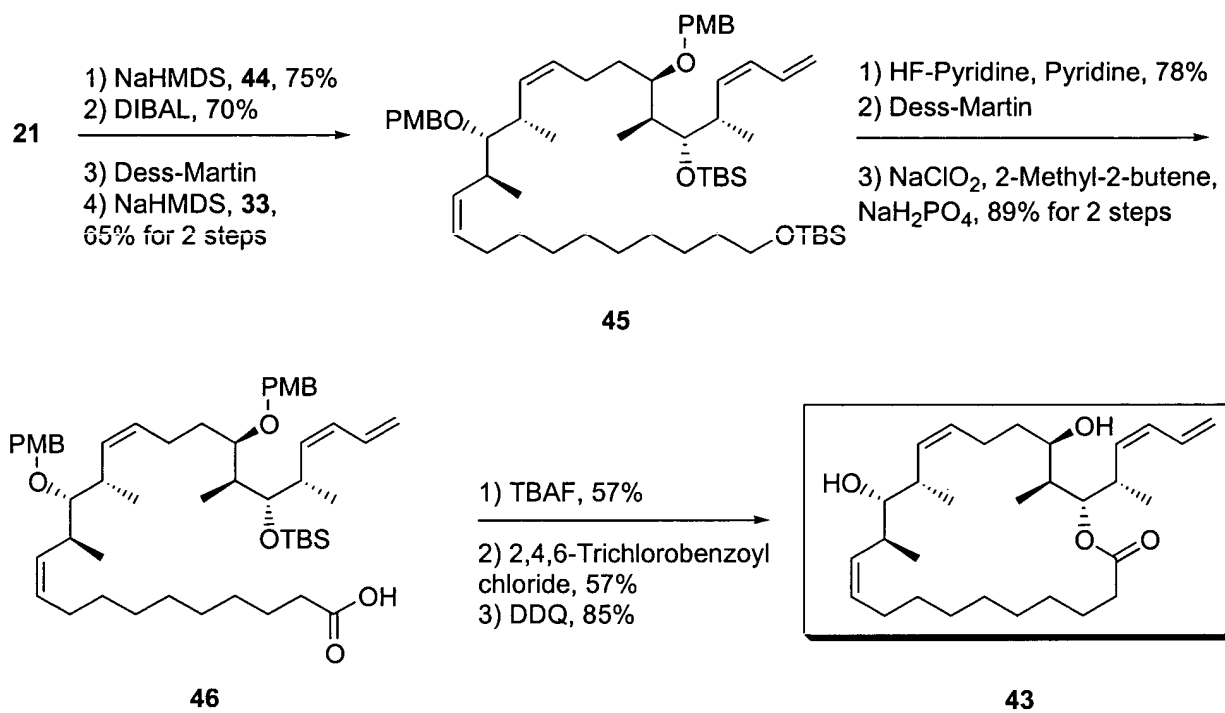
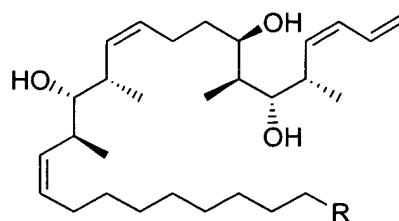


Figure 9. Acyclic Compounds for Biological Testing



47 R = CH₂OH

48 R = CO₂Me

49 R = CO₂H

Figure 10.

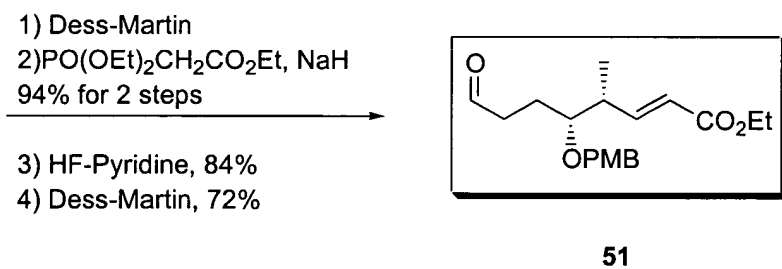
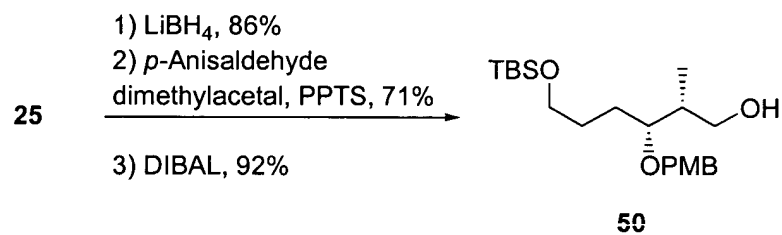


Figure 11.

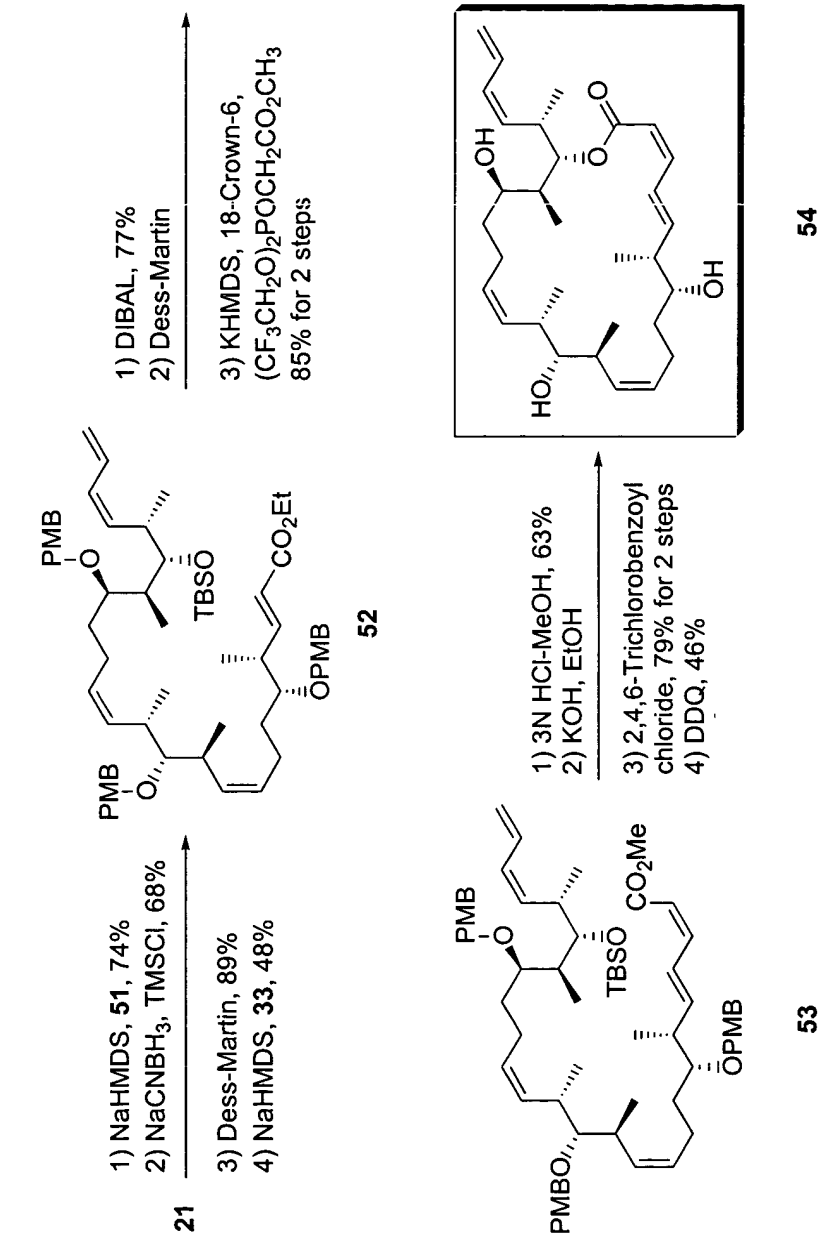
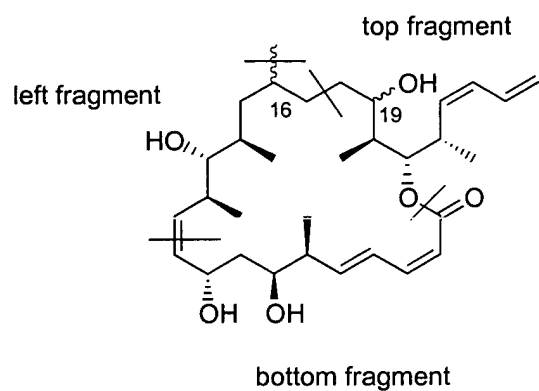


Figure 12.



configuration at C16 controlled by chiral auxilliary
configuration at C19 controlled by reduction
configurations of other stereocenters originate from
readily available precursors, so the plan allows access
to substantially all stereoisomers

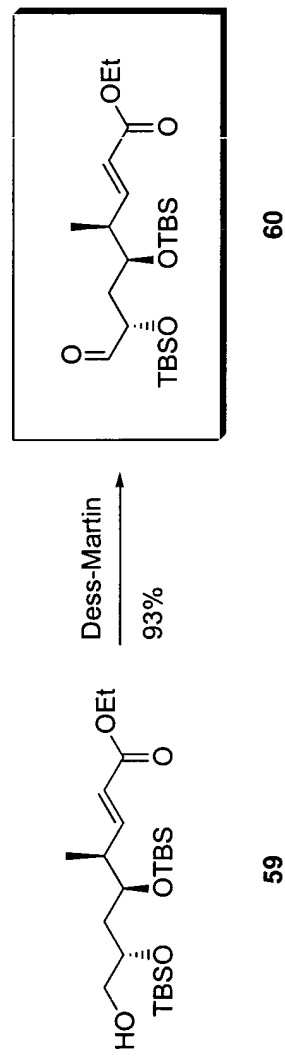
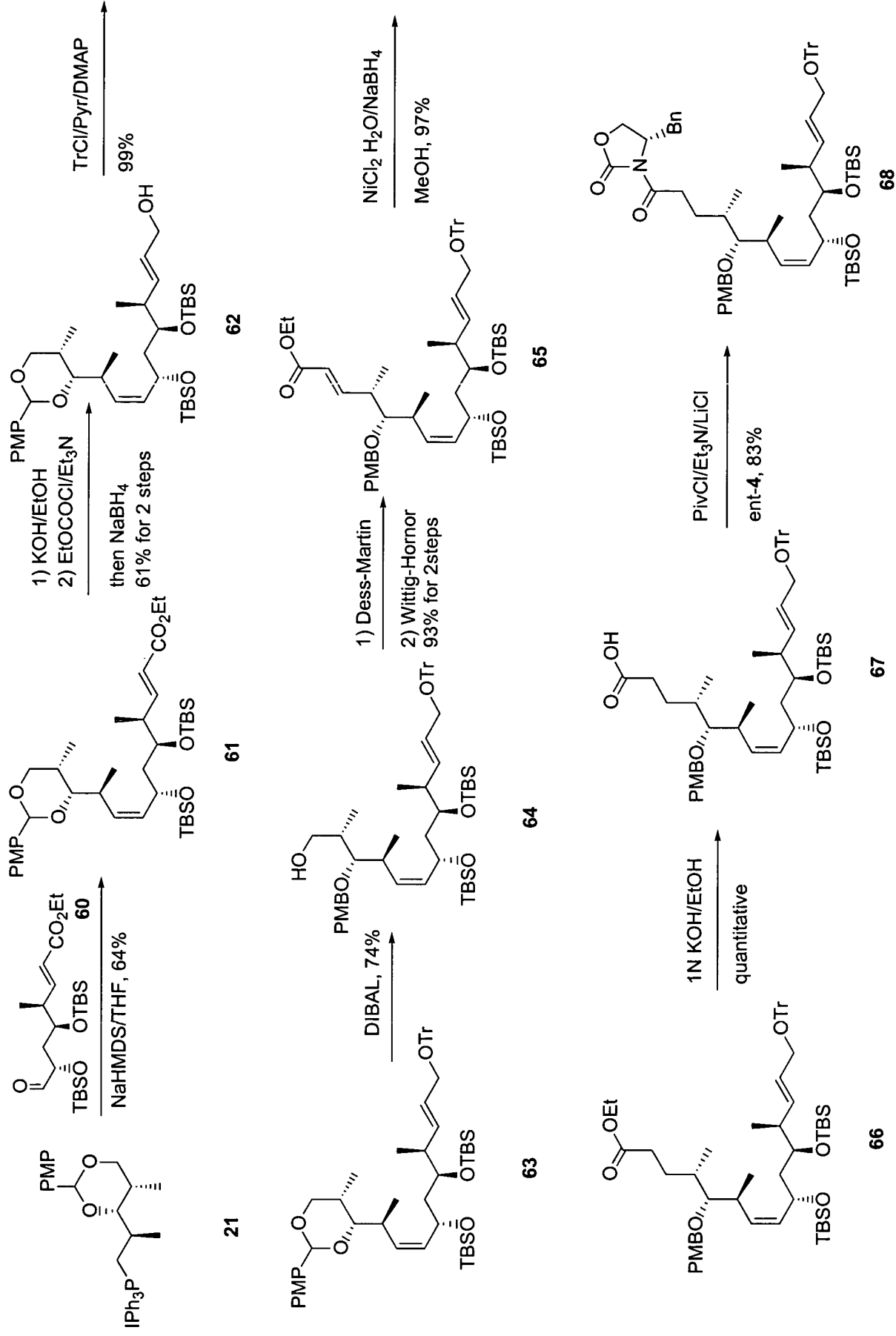


Figure 14.



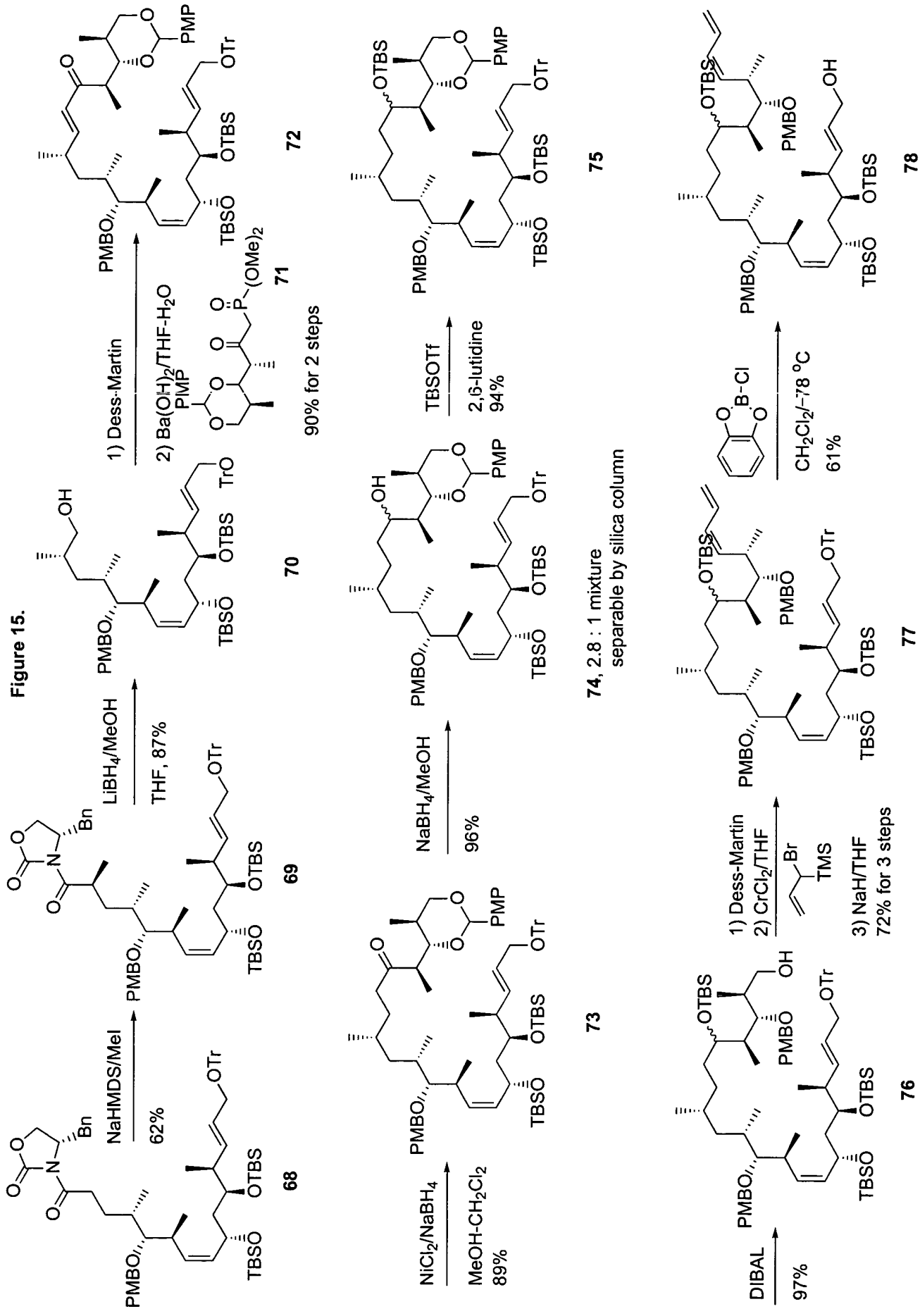


Figure 16.

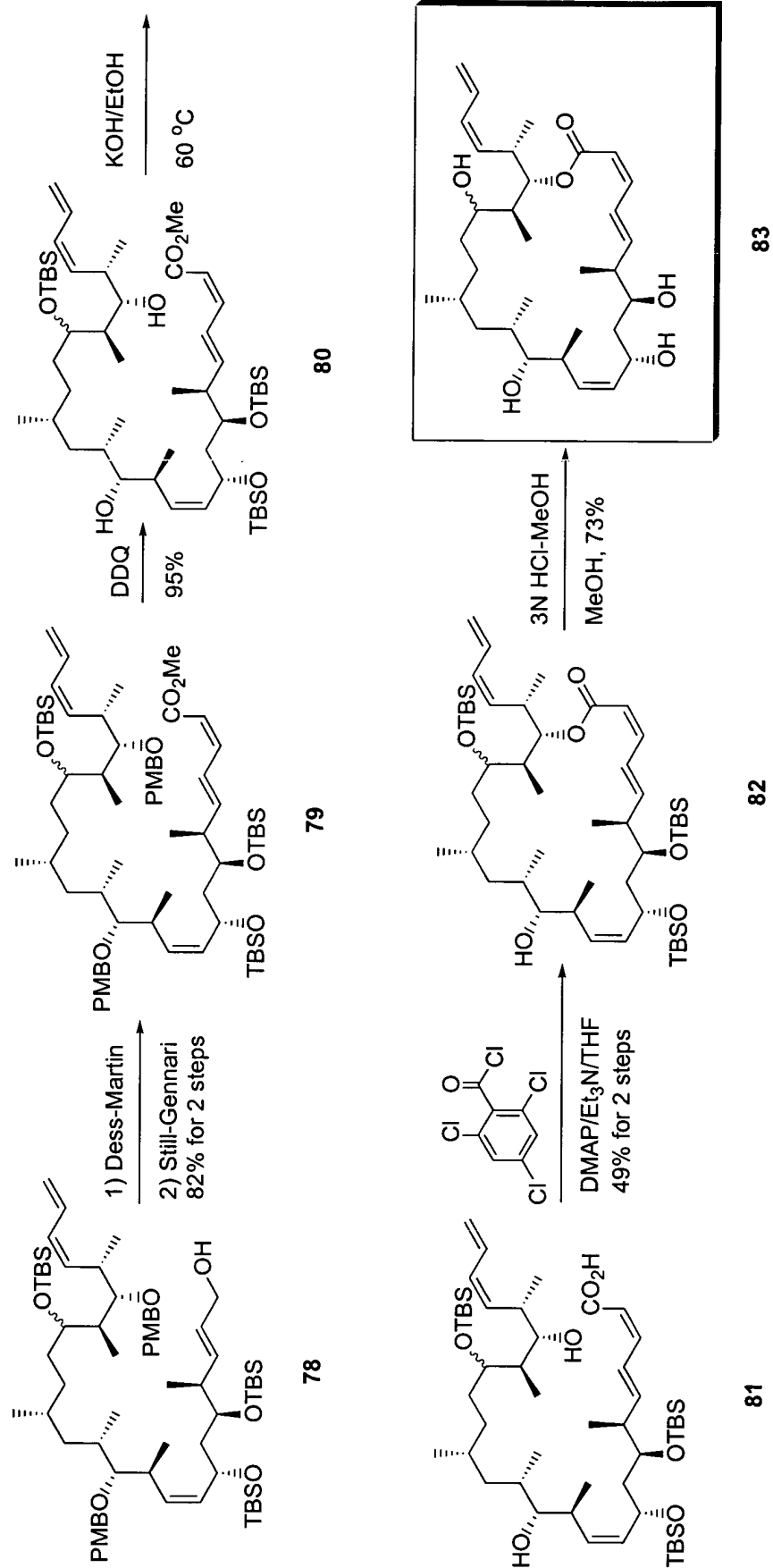
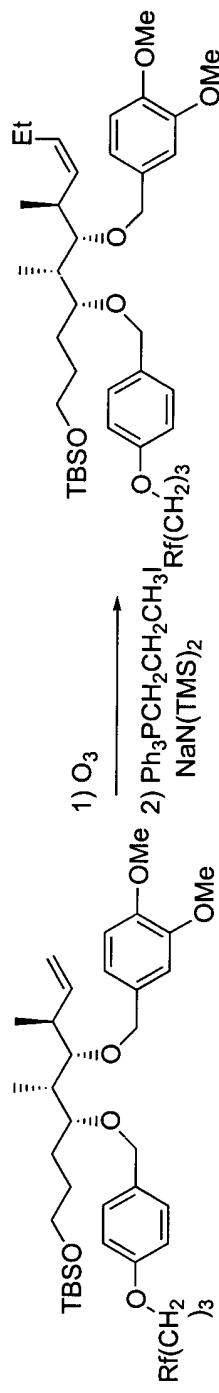
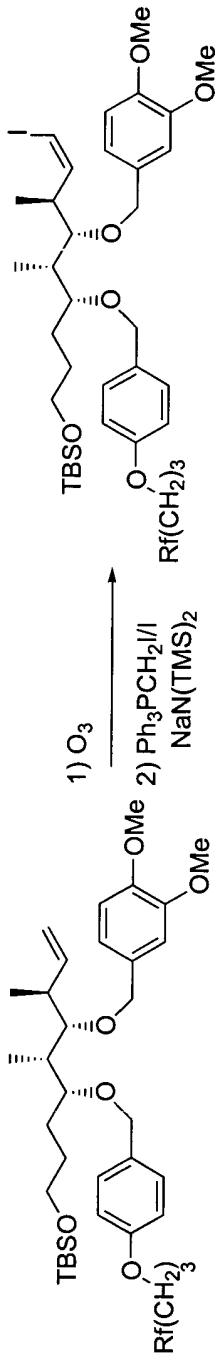


Figure 17.



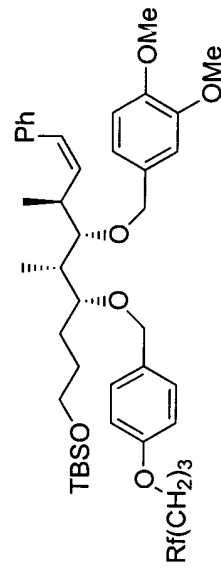
84, Rf = perfluoroalkyl

85



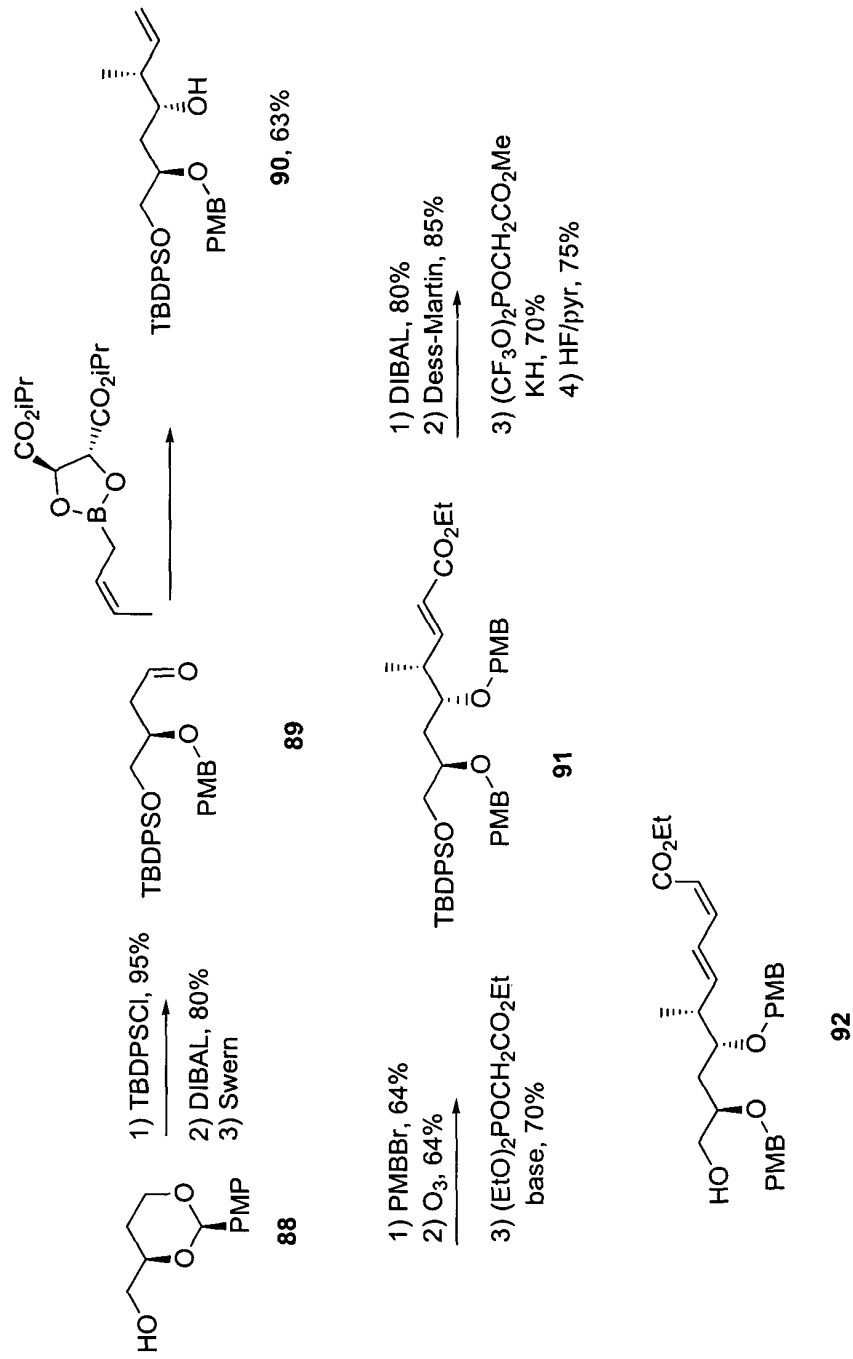
84, Rf = perfluoroalkyl

86



87

Figure 18.



ent-4

1) methacrolein
MgCl₂, NaSbF₆, Et₃N
TMSCl, EtOAc
2) TFA

93, 78%

94, 75%

1) TBSOTf, 95%
2) 9-BBN
3) H₂O₂

ent-17

1) TBSOTf, 95%
2) LiBH₄, 65%

95

96

97, 65%

98

1) PMBBBr, 75%
2) O₃